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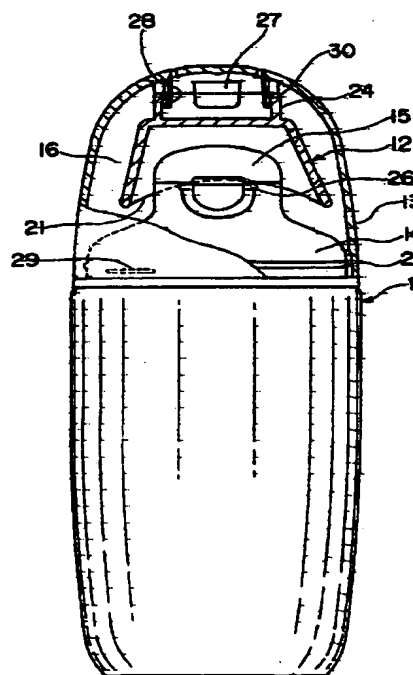
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• **KURUMADA, Toshiki****Nabari-shi, Mie 518-0754 (JP)****(54) EYE CUP STORING TYPE EYE WASH CONTAINER**

(57) A structure in an eyecup accommodating type of container for eyewash liquid, by which the eyecup is not easily exposed outside when the container is not employed. In the container for eyewash liquid, there is provided a container body 11, an eyecup 12, and a bell-shaped outer cover 13 for covering an upper cap 14 and an eyecup 12 locating above the upper cap 14, in which the bell-shaped outer cover 13 is detachably mounted onto the upper cap 14. The outer cover 13 has, on its top interior surface, an outer cap retaining leg 27 that detachably retains the eyecup 12 the top and bottom of which are reversed. The eyecup 12 is retained in an interior space 16 defined by the outer cover 13 and an upper portion of the container body 11. Because the eyecup 12 is not exposed outside, it is sanitary. The eyecup 12 is integrated with the outer cover 13; therefore, its assembling process of the container in a maker where the container is filled up with an eyewash liquid, can be simplified.

Fig. 3**EP 0 998 895 A1**

Description

TECHNICAL FIELD

[0001] The present invention relates to an eyewash receptacle for washing an eye with an eyewash, and particularly relates to the eyewash receptacle, suitable for carrying, of an eyecup housing type.

BACKGROUND ART

[0002] There has conventionally been provided an eyewash receptacle which is employed in a state in which the eyewash receptacle is placed in a washroom, as a main type of eyewash receptacle for washing an eye with an eyewash (eyewash liquid). The typical example is shown in Fig. 1. This type of eyewash receptacle is provided with a receptacle body 1 which has an upper cap, and is provided with an eyecup 2. As shown in the figure, the eyecup 2 is kept in a state in which the eyecup 2, postured upside down, is put on the receptacle body 1.

[0003] On the other hand, there has been a demand for carrying an eyewash receptacle and for washing an eye also in a place other than the place where the eyewash receptacle is always kept.

[0004] However, even if the eyewash receptacle is simply sized so as to be suitable for carrying itself in view of a situation that the eyewash receptacle, of the aforementioned type in which the eyewash receptacle is kept at a location, is carried inside a bag, etc., the following problem arises. That is, the eyecup 2 is merely lightly engaged with the receptacle body 1, with a state in which the eyecup 2, postured upside down, is overlaid upon the receptacle body 1. Therefore, when the eyecup 2 comes in contact with an object in the bag, the eyecup 2 gets out of the receptacle body 1. At this time, some dirt and dust inside the bag adheres to the eyecup 2, and this is hygienically unfavorable. Also, the dirt and dust inside the bag enter from a gap forming between the receptacle body 1 and the eyecup 2, and this is hygienically unfavorable, too. In addition, a compact eyecup suitable for carrying, has a small size; therefore, it is difficult to use the eyecup with the eyecup being placed on a table.

DISCLOSURE OF THE INVENTION

[0005] Therefore, a technical object to be achieved of the present invention is to obtain a structure in an eyewash receptacle (eyewash vessel, or eyewash container) of an eyecup housing type, the structure preventing an eyecup thereof from being easily exposed outside, when the eyewash receptacle is not used, namely when the eyewash receptacle is kept. Furthermore, another object thereof is to obtain the structure which gives a user a feeling of less oppression or less unpleasantness, when the eyecup is used with a state in

which the eyecup is put on a table.

[0006] In order to achieve the aforementioned technical object, there is provided an eyewash receptacle having the following construction.

[0007] That is, the eyewash receptacle comprises a receptacle body which has an upper cap, and comprises an eyecup which is placed on the upper cap, on an upper part of the receptacle body. Furthermore, the eyewash receptacle comprises an outer cover which covers the upper cap and which covers the eyecup thereon, wherein the outer cover is detachably connected to the upper part of the receptacle body, and wherein the eyecup is kept in an inner space forming between the outer cover and the upper part of the receptacle body. Therewith, there is realized a sanitary structure, as a fundamental feature, by which the eyecup is prevented from being exposed outside when the eyewash receptacle is not used.

[0008] According to one embodiment, the eyewash receptacle has the eyecup which is provided on the upper part of the receptacle body so as to cover the upper cap, with a posture in which the top and bottom of the eyecup are reversed vertically. The eyewash receptacle has a characterization in which it has a temple bell type of an outer cover which is detachably fixed to the upper portion of the receptacle body so as to cover both of the upper cap and the eyecup provided on it, and in which the outer cover has, on its top interior surface, a cup holding part for detachably holding the eyecup which is postured upside down vertically.

[0009] According to the above construction, this eyecup can be integrated with the outer cover by mounting the eyecup on the top interior surface of the outer cover beforehand. A maker for filling up the eyewash liquid fills the receptacle body with the eyewash liquid in a receptacle assembling process, and then the maker mounts the outer cover which has been integrated with the eyecup beforehand, on the receptacle body. Therefore, in comparison with a case in which the eyecup and the outer cover are separately mounted on the receptacle body after the eyewash liquid is filled up, the eyecup having the above construction contributes to a simplification of the receptacle assembling process thereof in the maker for filling up the eyewash liquid.

[0010] The cup holding part is generally constituted by an outer cover holding leg which forms on the top interior surface of the outer cover, and the eyecup has, on its bottom surface wall, a locking means (engagement means) which detachably locks (engages) with the outer cover holding leg. By the engagement therebetween, the eyecup is supported by the outer cover holding leg, with a posture in which the eyecup is turned upside down vertically.

[0011] Preferably, the outer cover has a degree of flexibility, by which the outer cover is so deformable that an inner wall surface of the outer cover contacts an apex of an eye contacting peripheral edge part of the eyecup being housed therein when an external force is exerted

upon the outer cover, and the support of the eyecup is released when the inner wall surface of the outer cover contacts the apex thereof.

[0012] With this arrangement, if the force is applied to a lower part of the wall surface of the outer cover in a state in which the outer cover is slightly separated from the receptacle body, then the outer cover is deformed to bring the interior wall surface thereof in contact with the apex of the eye contacting peripheral edge part of the eyecup, thus releasing the engagement between the outer cover holding leg and the locking means. Accordingly, the eyecup can be detached from the outer cover without touching the eyecup manually.

[0013] Furthermore, with this arrangement, the eyecup which has been detached from the outer cover, falls down to cover the upper cap with a state in which the eyecup is postured upside down. As a result, the eyecup is overlapped on an upper portion of the upper cap. This allows a smaller space in which the eyecup is accommodated; therefore, it is possible to make smaller the outer cover, which in turn makes it possible to miniaturize the eyewash receptacle.

[0014] In the above embodiment, preferably, the eyewash receptacle comprises: a receptacle body which has an upper cap; and an eyecup which is provided on an upper part of the receptacle body and which is provided on the upper cap, in which there is further provided an outer cover that covers the upper cap and the eyecup above it, in which the outer cover is removably connected to the upper part of the receptacle body, and in which the outer cover has, on an outer surface of an apex part thereof, an outer cover engagement body which removably holds the eyecup which is postured upwards.

[0015] According to the above construction, at time of employing the eyecup in a state in which it is placed on the table, the eyecup is raised up by the outer cover. Because there increases an interval between the table and the eyecup, it gives the user a feeling of less oppression or less unpleasantness.

BRIEF DESCRIPTION OF DRAWINGS

[0016]

Fig. 1 is a sectional view showing a conventional eyewash receptacle;

Fig. 2 is a front view of art eyewash receptacle according to one embodiment of the present invention;

Fig. 3 is a sectional view showing an essential part of the eyewash receptacle of Fig. 2, with a part thereof being broken;

Fig. 4A is a side view showing an eyecup of the eyewash receptacle of Fig. 2;

Fig. 4B is a plan view showing the eyecup of the eyewash receptacle of Fig. 2;

Fig. 4C is a perspective view showing the eyecup of

the eyewash receptacle of Fig. 2; and

Fig. 5 is a sectional view showing a method for using an outer cover and the eyecup, according to another embodiment of the present invention.

BEST MODE FOR CARRYING OUT THE INVENTION

[0017] Embodiments of the present invention will be described in detail with reference to Fig. 2 through Fig. 5.

[0018] Fig. 2 is a front view of an eyewash receptacle according to one embodiment of the present invention. In the figure, the eyewash receptacle has a flat bottle-shaped receptacle body 11 and a flat temple-bell-shaped outer cover 13. If the outer cover 13 is put on and fixed to an upper portion of the receptacle body 11 when an eye is not washed, then a flat barrel-shaped (cylindrical) eyewash receptacle is formed.

[0019] Fig. 3 is a sectional view showing an essential part of the eyewash receptacle of Fig. 2, with a part thereof being broken. In the figure, the receptacle body 11 has an upper cap 14 which covers an upper portion of the receptacle body 11 and which seals the eyewash liquid (or eyewash). An upper central part of the upper cap 14 has a small hole (not shown) through which the eyewash liquid can be made to fall down in drops. There is provided a hinged opening-and-closing lid 15 for opening and closing the small hole, on a top part of the upper cap 14. By opening the opening-and-closing lid 15 and by manually lightly pressing the receptacle body 11 with the receptacle body 11 facing down, the eyewash liquid accommodated inside the receptacle body is dropped down. The upper cap 14 is provided with a ring-shaped first engagement projection 25, for locking the outer cover 13, on a lower peripheral surface thereof. The upper cap 14 is, further, provided with a second engagement projection 26, for locking an eyecup 12, on an upper edge thereof.

[0020] The outer cover 13 has such a flexibility as its external shape is slightly deformed by an external force which is exerted thereto, and the outer cover 13 is provided with a cup holding part 27 for the eyecup 12, on a top interior surface thereof. This cup holding part 27 is composed of two pairs of outer cover holding legs 27, opposing to each other, which extend downward from the top interior surface of the outer cover 13, and the outer cover holding leg 27 is provided with a third engagement projection 28 for locking the eyecup 12, on its lower end. The outer cover 13 is provided with a fourth engagement projection 29 on its lower end peripheral surface, in which the fourth engagement projection 29 is detachably (releasably or removably) mounted on the first engagement projection 25 of the upper cap 14.

[0021] As shown in the figure, when the outer cover 13 is mounted and fixed on the receptacle body 11 by making the fourth engagement projection 29 engage with the ring-shaped first engagement projection 25, a

closed interior space 16 is formed between the outer cover 13 and the receptacle body 11.

[0022] Fig. 4A is a side view of the eyecup 12 of the eyewash receptacle shown in Fig. 2; Fig. 4B is a plan view thereof; and Fig. 4C is a perspective view thereof.

[0023] The eyecup 12 is a vessel (container) which has a peripheral wall 22 and a bottom wall 23 that is connected to a bottom portion of the peripheral wall 22. The peripheral wall 22 has an eye contacting peripheral edge part 21 of a swimming goggle type, at its upper edge. The bottom wall 23 is generally oval or generally circular in shape. A fifth engagement projection 30 is provided on an outside bottom surface of the bottom wall 23, or at a lower edge of the peripheral wall 22, in which the fifth engagement projection 30 is detachably attached to the third engagement projection 28 of the outer cover holding leg 27. The bottom wall 23 can be provided with a base (seat) which is constructed of a rim-like raising ring wall 24, as illustrated in the figure. The raising ring wall 24 is provided with the fifth engagement projection 30 on its inner peripheral surface, and the raising ring wall 24 is detachably connected to the engagement projection 28 of the outer cover 13. Similar to the prior art, a sixth engagement projection 31 is provided on an interior surface of the eyecup 12, for example on a central part of the interior surface of the eye contacting peripheral edge part 21 of the peripheral wall 22, and the sixth engagement projection 31 is detachably connected to the second engagement projection 26 of the upper cap 14.

[0024] The eyecup 12 is housed inside the outer cap 13 in a state in which the eyecup 12 is postured downwards and in which the eyecup 12 engages with the outer cover holding leg 27, as shown in Fig. 3. The eyecup 12 and the outer cap 13 are constructed so that a peak of the eye contacting peripheral edge part 21 (normally, the peak locating generally at a center of the eye contacting peripheral edge part on a tail side of the eye) keeps a small distance relative to the inner peripheral surface of the outer cap 13.

[0025] A method for assembling the eyewash receptacle having the above construction, and a method for employing the same, will be described below.

[0026] First, it is explained about a process to assemble the eyewash receptacle, and about a process to fill up the eyewash liquid therein, in a manner where the eyewash liquid is filled up.

[0027] In a first process to assemble the receptacle, the outer cover 13 inside which the eyecup 12 is accommodated, is made by turning the eyecup 12 upside down and then by making the eyecup 12 engage with the cup holding part 27. Next, in the process to fill up the eyewash liquid therein, the eyewash liquid is filled up into the receptacle body 11 through the hole formed on the upper part of the receptacle body 11, and then the upper cap 14 is made to cover the receptacle body 11 to seal the receptacle body 11 airtightly. Further, in a sec-

ond process to assemble the receptacle, the ring-shaped first engagement projection 25 and the fourth engagement projection 29 are engaged with each other in such a manner that the outer cover 13 covers the upper cap 14, so that the outer cover 13 is fixed to the receptacle body 11 which is filled up with the eyewash liquid. As a result, as shown in Fig. 3, there is provided the eyewash receptacle in which the receptacle body 11 is integrated with the outer cover 13 that holds the eyecup 12.

[0028] Next, a method for employing the eyewash receptacle will be described.

[0029] First, a user takes out the eyewash receptacle which he/she carries inside his/her bag, etc. Then, the user releases the engagement between the first engagement projection 25 of the upper cap 14 and the fourth engagement projection 29 of the outer cover 13 so as to put the outer cover 13 into a state in which the outer cover 13 is slightly separated from the receptacle body 11, and then the user holds the outer cover 13 and the receptacle body 11. A force is applied to the outer cover 13 so that a lower end on a side of a longer axis of the outer cover 13 is slightly deformed. In this stage, the inner peripheral surface of the outer cap 13 abuts against the peak (apex) of the eye contacting peripheral edge part 21 of the eyecup 12 which is retained inside the outer cover 13. Consequently, the peak of the eye contacting peripheral edge part 21 moves downward, and the engagement between the third engagement projection 28 of the outer cover holding leg 27 and the fifth engagement projection 30 of the eyecup 12 is released. As a result, the eyecup 12 which has been engaged with the outer cap 13, is dropped down onto the upper cap 14. Alternatively, the user may put his/her palm under a lower edge of the outer cap 13 accommodating the eyecup 12 inside, and may receive the eyecup 12 on the palm by deforming the outer cap 13 as aforementioned.

[0030] The eyecup 12, thus taken out, is placed on a table with its face up. On the other hand, after opening the opening-and-closing lid 15, the user directs the receptacle body 11 downward, and then he/she presses the receptacle body 11 slightly by hand so as to allow the eyewash liquid to be dropped down into the eyecup 12. After slightly pressing the eyecup 12, filled with the eyewash liquid, against a flesh portion around the eye socket (orbit) of the user's face down, the user turns his/her head rearwards (backwards) to direct his/her face up, so as not to let the eyewash liquid spill away, and he/she repeats blinking the eye therein several times.

[0031] After washing the eye, the second engagement projection 26 of the upper cap 14 is engaged with the sixth engagement projection 31 of the eyecup 12, and the eyecup 12 is placed on the top part of the upper cap 14 so as to cover the top part thereof with the eyecup 12 being postured upside down. Further, the outer cap 13 is fixed to the receptacle body 11 by engaging

the first engagement projection 25 of the upper cap 14 with the fourth engagement projection 29 of the outer cover 13 so that the outer cap 13 covers the upper cap 14. Accordingly, the eyecup 12 is accommodated inside the interior space 16 in a state in which the eyecup 12 postures upside down and in which the eyecup 12 covers the upper portion of the upper cap 14. Therefore, when the eyewash receptacle is put in a bag and is carried therein, neither a dirt, nor a dust, enters the interior space 16.

[0032] Next, with reference to Fig. 5, it is explained about a method for using the eyewash receptacle according to another embodiment of the present invention, in which the eyecup 12 is held on an outer surface of an apex part of the outer cover 13 which is placed on a table.

[0033] The outer cover 13 of Fig. 5 is provided with the same structure as that of the outer cover 13 which is shown in Fig. 3, and it is further provided with an outer cover engagement body 32 for the eyecup 12, on the outer surface of the apex part. This outer cover engagement body 32 is constructed of a dome-shaped raised portion (dome-shaped upheaval portion) that rises (heaves) upwards from the outer surface of the top part (apex part) of the outer cover 13, and the outer cover engagement body 32 has such a dimension that it engages with the fifth engagement projection 30 of the eyecup 12. Alternatively, this outer cover engagement body 32 may be constructed of at least one pair of engagement projections facing each other, a ring-shaped engagement projection, or an intermittent (discontinuous) ring-shaped engagement projection which are not shown.

[0034] Next, it is explained about a method for using the outer cover 13 and the eyecup 12. The outer cover 13 is placed on the table with its opening portion facing down. The eyecup 12 is placed on and fixed to the outer surface (exterior surface) of the apex part of the outer cover 13 with a state in which the eyecup 12 postures upwards and in which the outer cover engagement body 32 of the outer cover 13 engages with the fifth engagement projection 30 of the eyecup 12. The user turns the receptacle body 11 upside down, and presses the receptacle body 11 lightly by hand with the receptacle body 11 being postured downwards. Under the condition, the user drops the eyewash liquid into the eyecup 12 until it is almost filled up with the eyewash liquid. The user lightly presses a flesh portion around the eye socket against the eyecup 12 filled up with the eyewash liquid, with the face down. Then, the user washes the eye by blinking it several times therein, with a state in which he/she holds the eyecup 12, or the outer cover 13, so that the liquid does not spill therefrom.

[0035] According to the usage, the eyecup 12 is raised up (upheaved) by the height which corresponds to the height of the apex part of the outer cover 13. Therefore, the distance between the user's face and the table increases. That is, the table 15 does not come

close to the very front of the user's face, nor the user's nose 22 does not contact the table 15. Consequently, the user does not have a feeling of oppression or unpleasantness.

[0036] Incidentally, the same engagement holding effect as mentioned above, can be realized, even if there is provided the first engagement projection 25 on an upper outer peripheral surface of the receptacle body 11, or even if there is provided the second engagement projection 26 on a peripheral surface of the opening-and-closing lid 15. Also, by forming at least one of the first engagement projection 25 and the fourth engagement projection 29 into a ring-shaped projection, a sealing nature (hermetic quality) therebetween at time of their engagement increases, so that the dirt and dust can be prevented from entering the interior space 16.

[0037] Furthermore, the shape of the eyecup 12 is not limited to the shape of Fig. 4A. It is possible to properly select the shape of the eye contacting peripheral edge part 21, it is possible to properly select the shape of the raising ring wall 24, and/or it is possible to properly select whether there is provided the raising ring wall 24 or not. Also, the first through sixth engagement projections 25, 26, 28, 29, 30 and 31, and the outer cover engagement body 32, are not limited to the projection shapes. Even if each of the corresponding engagement projections is constituted by a combination of a projection and a recess (concave part), the similar engagement holding effect can be realized.

Claims

1. An eyewash receptacle of an eyecup housing type, comprising:

a receptacle body (11) which has an upper cap (14); and

an eyecup (12) which is provided on an upper part of the receptacle body (11) in a posture in which a top and a bottom of the eyecup (12) are opposite, wherein the eyecup (12) covers the upper cap (14),

characterized in that there is further provided an outer cover (13) which is hanging-bell-shaped, which covers the upper cap (14), and which covers the eyecup (12) thereon, wherein the outer cover (13) is detachably connected to the upper part of the receptacle body (11), and that the outer cover (13) has, on an inner surface of a top part thereof, a cup holding part (27) for detachably holding the eyecup (12) in the posture in which the top and the bottom of the eyecup (12) are opposite.

2. The eyewash receptacle of the eyecup housing type as claimed in claim 1, wherein the cup holding part (27) is constituted by an outer cover holding leg

(27) which forms on the inner surface of the top part of the outer cover (13), and wherein the eyecup (12) has, on a bottom surface wall thereof, a locking means (30) which detachably locks with respect to the outer cover holding leg (27). 5

3. The eyewash receptacle of the eyecup housing type as claimed in claim 2, wherein the outer cover (13) has a degree of flexibility, by which the outer cover (13) is so deformable that the outer cover (13) contacts a part of the eyecup (12) being housed therein when an external force is exerted upon the outer cover (13), and wherein the eyecup (12) is released from locking therewith when the outer cover (13) contacts the part of the eyecup (12). 10 15

4. An eyewash receptacle of an eyecup housing type, comprising: 20

a receptacle body (11) which has an upper cap (14); and an eyecup (12) which is provided on an upper part of the receptacle body (11) and which is provided on the upper cap (14), characterized in that there is further provided an outer cover (13) which covers the eyecup (12), and which covers one of the upper cap (14) and a part of the upper cap (14), wherein the outer cover (13) is removably fixed to the upper part of the receptacle body (11). 25 30

5. The eyewash receptacle of the eyecup housing type as claim in claim 4, wherein the outer cover (13) has, on an outer surface of an apex part thereof, an outer cover engagement body (32) for removably holding the eyecup (12) which is positioned upwards. 35 40

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Fig. 1

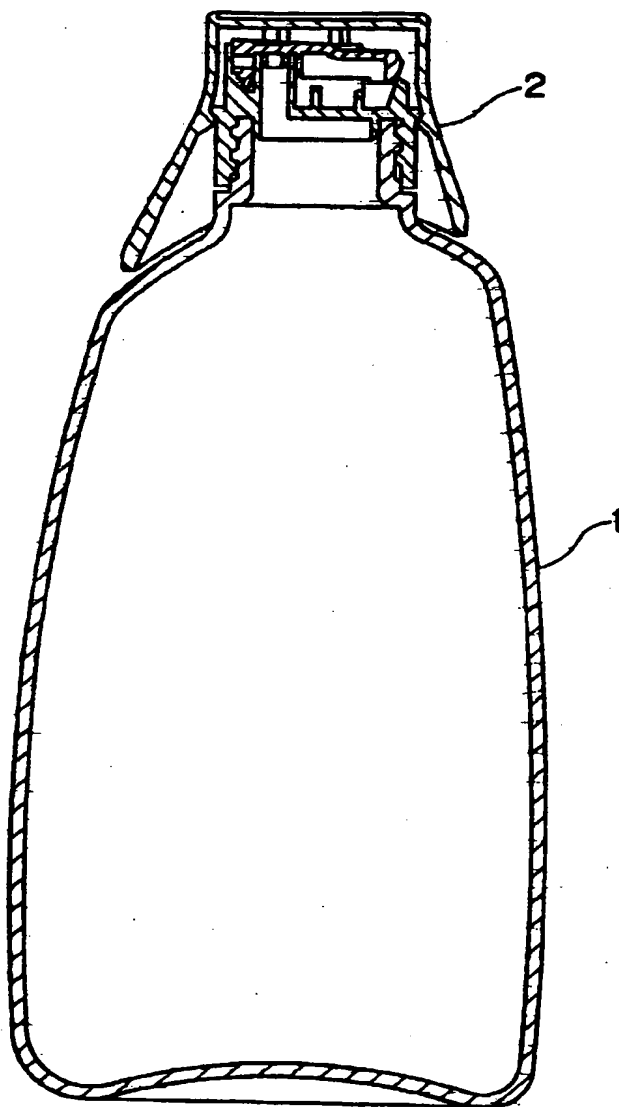


Fig. 2

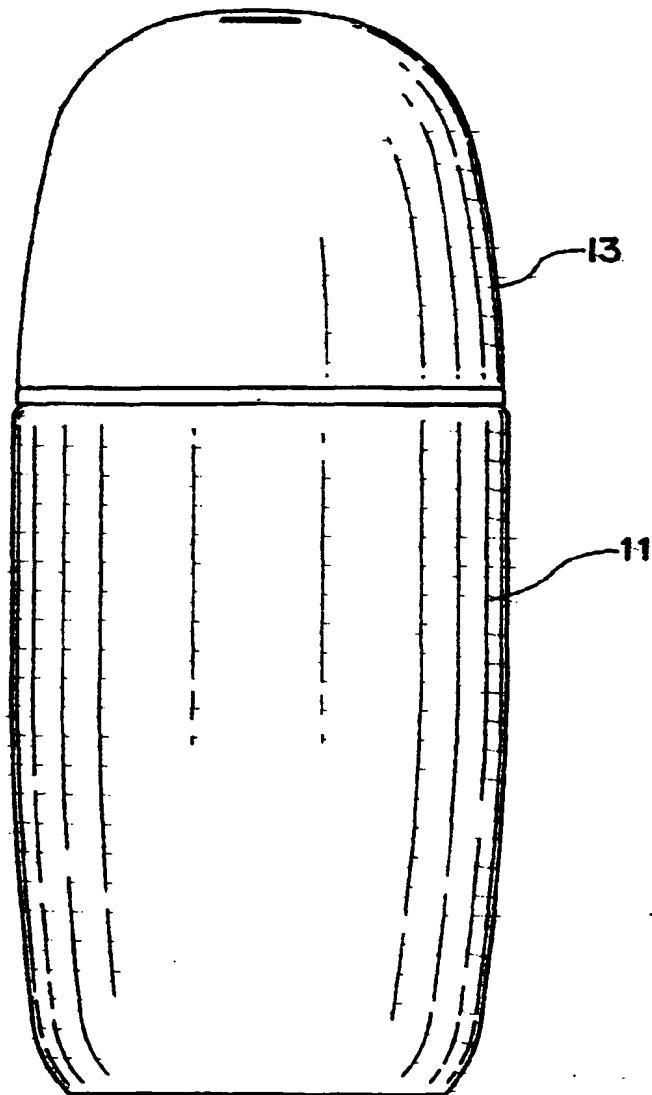


Fig. 3

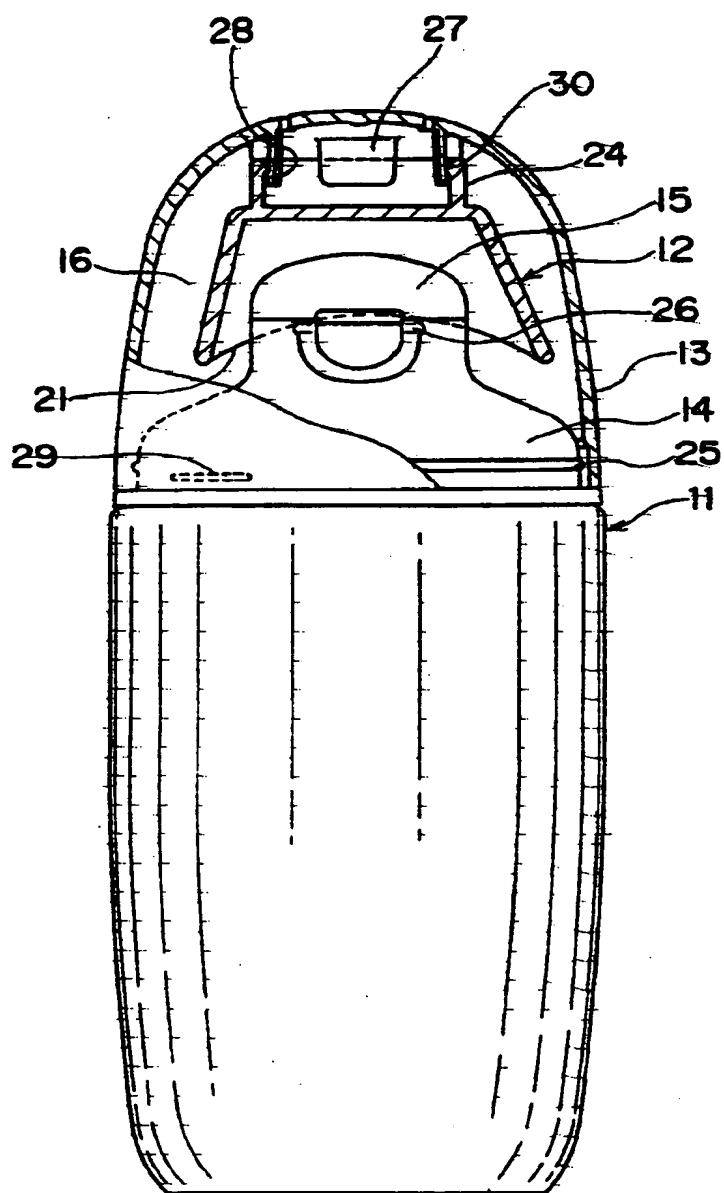


Fig. 4A

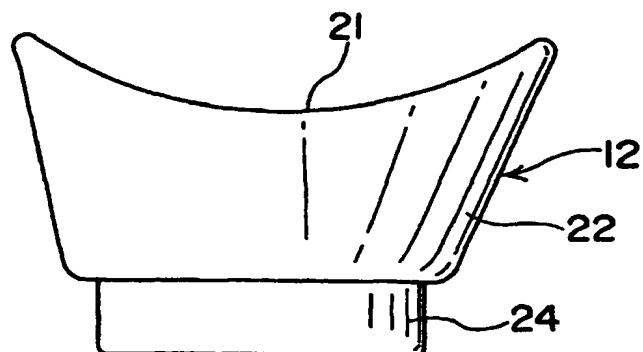


Fig. 4B

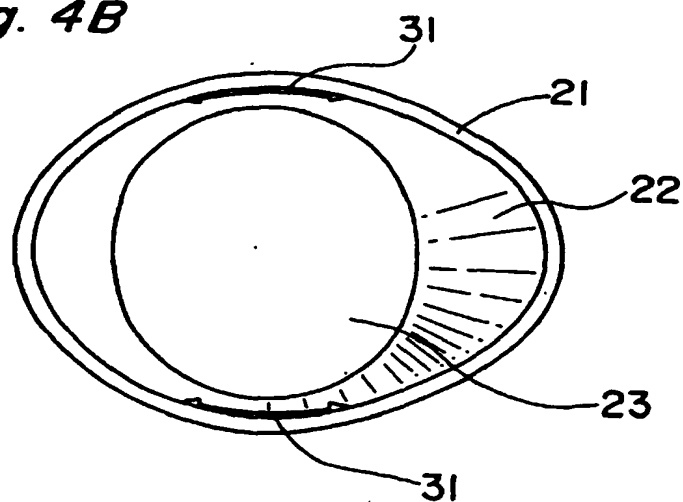


Fig. 4C

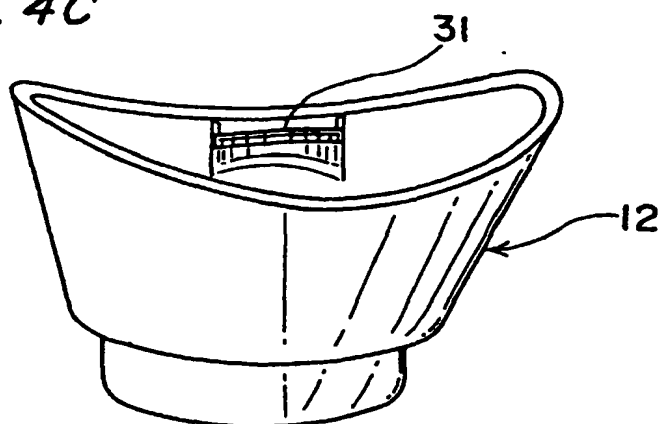
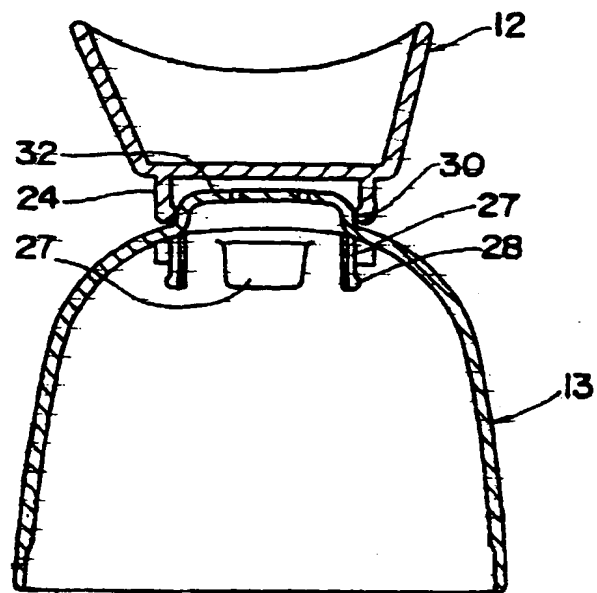


Fig. 5



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP99/02639

A. CLASSIFICATION OF SUBJECT MATTER Int.Cl ⁶ A61H35/02		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) Int.Cl ⁶ A61H35/02		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Jitsuyo Shinan Koho 1926-1996 Toroku Jitsuyo Shinan Koho 1994-1999 Kokai Jitsuyo Shinan Koho 1971-1999 Jitsuyo Shinan Toroku Koho 1996-1999		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP, 4-53795, Y2 (Yoshino Kogyosho Co., Ltd.), 17 December, 1992 (17. 12. 92), Full text ; Figs. 1, 2 (Family: none)	1-5
A	JP, 4-38831, Y2 (Yoshino Kogyosho Co., Ltd.), 10 September, 1992 (10. 09. 92), Full text ; Figs. 1, 2 (Family: none)	1-5
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
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Date of the actual completion of the international search 12 August, 1999 (12. 08. 99)		Date of mailing of the international search report 24 August, 1999 (24. 08. 99)
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